

REMARKS

Claims 1, 10, 40 and 41 have been amended. Claims 1, 10, 15-23, 32, 34, 35, 38, 40 and 41 are pending. Claims 15-23, 32, 34 and 35 have been withdrawn from consideration. Claims 1, 10, 40 and 41 are the independent claims. No new matter is presented in this Amendment.

DOUBLE PATENTING:

Claims 1 and 10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 11 and 15 of U.S. Patent No. 6,797,435 (Kweon '435) in view of Amatucci et al. 5,705,291.

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of claim 1, it is noted that claim 1 recites, amongst other novel features, a positive active material composition for a rechargeable lithium battery, comprising: a positive active material comprising at least one lithiated compound; and at least one amorphous additive compound physically mixed with the positive active material and selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonates.

Kweon '435 is drawn to a positive active material comprising a core and at least two-surface treatment layers. Kweon '435 does not teach an additive compound being physically mixed with the positive active material, as recited in independent claim 1.

Amatucci on the other hand simply discloses an electrode coated with a passivating layer including a hydroxide. Accordingly, Amatucci also fails to teach or suggest an additive compound being physically mixed with the positive active material, as recited in independent claim 1.

Accordingly, Applicants respectfully assert that neither Kweon '435 nor Amatucci, whether taken singly or combined, teach or suggest the novel features of independent claim 1, and therefore request that the rejection of claim 1 under the obviousness-type double patenting rejection be withdrawn.

Regarding the rejection of independent claim 10, it is noted that this claim recites some substantially similar features as claim 1. Thus, the rejection of this claim is also traversed for the reasons set forth above.

Claims 1 and 10 are rejected under the judicially created doctrine of obviousness-type double patenting as being patentable over claims 1-5 and 12-17 of U.S. Patent No. 6,753,111 (Kweon '111).

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of claim 1, it is noted that claim 1 recites, amongst other novel features, a positive active material composition for a rechargeable lithium battery, comprising: a positive active material comprising at least one lithiated compound; and at least one amorphous additive compound physically mixed with the positive active material and selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonates.

Kweon '111 on the other hand is drawn to a positive active material comprising a core and a surface treatment layer on the core. Kweon '111 does not teach an additive compound physically mixed with the positive active material, as recited in independent claim 1.

Accordingly, Applicants respectfully assert that Kweon '111 does not teach or suggest the novel features of independent claim 1, and therefore request that the rejection of claim 1 under the obviousness-type double patenting rejection be withdrawn.

Regarding the rejection of independent claim 10, it is noted that this claim recites some substantially similar features as claim 1. Thus, the rejection of this claim is also traversed for the reasons set forth above.

Claims 1 and 10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being patentable over claims 1-15, 28-30, 32-35 of copending Application No. 10/189,384 (*US Patent Application Publication 2003/0054250, herein after Kweon '250*).

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of claim 1, it is noted that claim 1 recites, amongst other novel features, a positive active material composition for a rechargeable lithium battery, comprising: a positive active material comprising at least one lithiated compound; and at least one amorphous additive compound physically mixed with the positive active material and selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonates.

Kweon '250 on the other hand is drawn to an active material comprising a material that undergoes reversible electrochemical oxidation-reduction reactions and having a surface, and a surface treatment layer on the surface. Kweon '250 does not teach an additive compound physically mixed with the positive active material, as recited in independent claim 1.

Accordingly, Applicants respectfully assert that Kweon '250 does not teach or suggest the novel features of independent claim 1, and therefore request that the rejection of claim 1 under the obviousness-type double patenting rejection be withdrawn.

Regarding the rejection of independent claim 10, it is noted that this claim recites some substantially similar features as claim 1. Thus, the rejection of this claim is also traversed for the reasons set forth above.

Claims 1 and 10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 and 23-28 of copending Application No. 10/072923 (*US patent Application 2003/0003352, hereinafter Kweon '352*) in view of Amatucci et al. 5,705,291.

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of claim 1, it is noted that claim 1 recites, amongst other novel features, a positive active material composition for a rechargeable lithium battery, comprising: a positive active material comprising at least one lithiated compound; and at least one amorphous additive compound physically mixed with the positive active material and selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-

absorbent element-included hydroxycarbonates.

Kweon '352 on the other hand is drawn to a positive electrode comprising a current collector, a positive active material layer coated on the current collector, and a surface-treatment layer on the positive active material layer. Kweon '352 does not teach an additive compound physically mixed with the positive active material, as recited in independent claim 1.

Amatucci on the other hand simply discloses an electrode coated with a passivating layer including a hydroxide. Accordingly, Amatucci also fails to teach or suggest an additive compound being physically mixed with the positive active material, as recited in independent claim 1.

Accordingly, Applicants respectfully assert that neither Kweon '352 nor Amatucci, whether taken singly or combined, teach or suggest the novel features of independent claim 1, and therefore request that the rejection of claim 1 under the obviousness-type double patenting rejection be withdrawn.

Regarding the rejection of independent claim 10, it is noted that this claim recites some substantially similar features as claim 1. Thus, the rejection of this claim is also traversed for the reasons set forth above.

Claims 1 and 10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-10 and 25-37 or copending Application No. 09/897445 (*US Patent Application Publication 2002/0071990, hereinafter Kweon '990*).

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of claim 1, it is noted that claim 1 recites, amongst other novel features, a positive active material composition for a rechargeable lithium battery, comprising: a positive active material comprising at least one lithiated compound; and at least one amorphous additive compound physically mixed with the positive active material and selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonates.

Kweon '990 on the other hand is drawn to a positive active material comprising a core

and a surface treatment layer on the core. Kweon '990 does not teach an additive compound physically mixed with the positive active material, as recited in independent claim 1.

Accordingly, Applicants respectfully assert that Kweon '990 does not teach or suggest the novel features of independent claim 1, and therefore request that the rejection of claim 1 under the obviousness-type double patenting rejection be withdrawn.

Regarding the rejection of independent claim 10, it is noted that this claim recites some substantially similar features as claim 1. Thus, the rejection of this claim is also traversed for the reasons set forth above.

Claims 1 and 10 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 and 25-37 of copending Application No. 10/627725 (*US Patent Application 2004/0018429, hereinafter Kweon '429*).

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of claim 1, it is noted that claim 1 recites, amongst other novel features, a positive active material composition for a rechargeable lithium battery, comprising: a positive active material comprising at least one lithiated compound; and at least one amorphous additive compound physically mixed with the positive active material and selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonates.

Kweon '429 on the other hand is drawn to a positive active material comprising a core and a surface treatment layer on the core. Kweon '429 does not teach an additive compound physically mixed with the positive active material, as recited in independent claim 1.

Accordingly, Applicants respectfully assert that Kweon '429 does not teach or suggest the novel features of independent claim 1, and therefore request that the rejection of claim 1 under the obviousness-type double patenting rejection be withdrawn.

Regarding the rejection of independent claim 10, it is noted that this claim recites some substantially similar features as claim 1. Thus, the rejection of this claim is also traversed for the reasons set forth above.

REJECTIONS UNDER 35 U.S.C. §103:

Claims 1, 10, 38, and 40-41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Amatucci et al. (U.S. Patent No. 5,705,291) in view of Japanese publication JP 09-171813.

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of claim 1, it is noted that claim 1 recites, amongst other novel features, a positive active material composition for a rechargeable lithium battery, comprising: a positive active material comprising at least one lithiated compound; and at least one amorphous additive compound physically mixed with the positive active material and selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included oxycarbonate, and a thermal-absorbent element-included hydroxycarbonates.

Applicants respectfully assert that neither Amatucci nor JP '813, whether taken singly or combined, teach or suggest the novel features of independent claim 1.

Amatucci discloses a lithium intercalation cell in which the surfaces of lithiated particulates are passivated by coating or encapsulating the particulates in a layer including a composition comprising boron oxide, boric acid, lithium hydroxide, aluminum oxide, lithium aluminate, lithium metaborate, silicon dioxide, lithium silicate, or mixtures thereof. Amatucci further discloses that after the particulates are coated with the composition, annealing is performed at a temperature of about 400°C (column 2, lines 5-24). In other words, Amatucci discloses a composition used to coat the positive active material, which is evident from the fact that Amatucci discloses the processes of annealing.

Contrary to Amatucci, independent claim 1 recites a composition wherein the additive compound is physically mixed with the positive active material, and not coated.

Similarly, the JP '813 publication discloses a nonaqueous electrolyte secondary battery having its positive electrode active material or negative electrode active material covered with an inorganic ion conductive membrane.

Accordingly, the JP '813 publication also discloses a hydroxide used to coat the positive active material. Therefore, the hydroxide disclosed by JP '813 is not used as an additive for the composition, but rather as a coating material. Accordingly, the hydroxide is not physically mixed with the positive active material, as recited in the independent claim.

Therefore, neither Amatucci nor the JP '813 application, whether taken singly or combined, teach or suggest the features recited in independent claim 1.

Regarding the rejections of independent claims 10, 40 and 41, it is noted that these claims recite substantially similar subject matter as claim 1. Thus, the rejections of these claims are also traversed for the reasons set forth above.

Accordingly, Applicants respectfully assert that the rejection of claims 10, 40 and 41 under 35 U.S.C. §103(a) should be withdrawn because neither Amatucci nor the JP '813 publication, whether taken singly or combined teach or suggest each feature of independent claims 10, 40 and 41.

Regarding the rejection of claim 38, it is respectfully asserted that the rejection of dependent claim 38 under 35 U.S.C. § 103(a) should be withdrawn at least because of its dependency from claim 1 and the reasons set forth above, and because the dependent claim includes additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claim 38 also distinguishes over the prior art.

Claims 1, 10, 38, and 40 are rejected under 35 U.S.C. §103(a) as being unpatentable over Amatucci et al. (U.S. Patent No. 5,705,291) in view of Yano et al. (U.S. Patent No. 5,827,494).

Applicants respectfully traverse this rejection for at least the following reasons.

As noted above, Amatucci fails to teach or suggest the novel features recited in independent claims 1, 10 and 40.

Yano discloses an electrode active material of batteries using an active material powder which comprises composite particles comprising Ni-hydroxide or solid solutions particles consisting essentially of Ni-hydroxide the surface of which is covered with a mixture of Co-hydroxide and the hydroxide of at least one metal selected from the group consisting of Al, Mg (abstract). That is, Yano discloses a hydroxide used as the positive active material itself.

Contrary to Yano, the independent claims recite a positive active material and at least one amorphous additive compound physically mixed with the positive active material and selected from the group consisting of a thermal-absorbent element-included hydroxide, a thermal-absorbent element-included oxyhydroxide, a thermal-absorbent element-included

oxycarbonate, and a thermal-absorbent element-included hydroxycarbonate. In other words, the composition includes a positive active material and an additive compound physically mixed with the positive active material.

Accordingly, it is respectfully asserted that Yano also fails to teach a positive active material and an additive as recited above, and therefore, neither Amatucci nor Yano, whether taken singly or combined, teach or suggest the features recited in independent claims 1, 10 and 40.

Accordingly, Applicants respectfully assert that the rejection of independent claims 1, 10 and 40 under 35 U.S.C. §103(a) should be withdrawn.

Regarding the rejection of claim 38, it is respectfully asserted that the rejection of dependent claim 38 under 35 U.S.C. § 103(a) should be withdrawn at least because of its dependency from claim 1 and the reasons set forth above, and because the dependent claim includes additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claim 38 also distinguishes over the prior art.

Claim 1 is rejected under 35 U.S.C. §103(a) as being unpatentable over Amatucci et al. (U.S. Patent No. 5,705,291) in view of the Korean publication KR 1997-56445.

Applicants respectfully traverse this rejection for at least the following reasons.

As noted above, Amatucci fails to teach or suggest the novel features recited in independent claim 1.

The KR '445 publication discloses a Co-based hydroxide complex material added to an electrochemically active material to increase the capacity of a cell containing the same (abstract).

The KR '445 publication fails to cure the deficiencies of Amatucci and therefore, fails to teach or suggest the novel features of independent claim 1.

Therefore, neither Amatucci nor the KR '445 publication teach or suggest the features recited in independent claim 1.

Accordingly, Applicants respectfully assert that the rejection of independent claim 1 under 35 U.S.C. §103(a) should be withdrawn because neither Amatucci nor the KR '445 publication,

whether taken singly or combined teach or suggest each feature of independent claim 1.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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